

# Military Operational Medicine Research Program

**MISSION:** Perform medical research to produce biomedical solutions to protect, sustain, and enhance warfighter performance in the face of the entire spectrum of operational and systems stressors.



## EXTERNAL STRESSORS



## Energy Demands

### Environmental Stressors

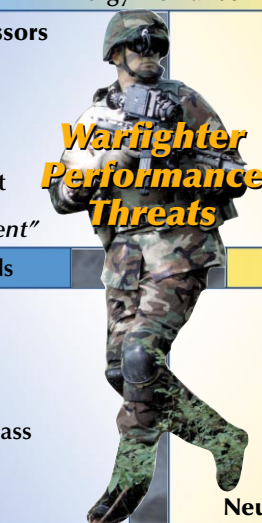
Cold Immersion  
Freezing Cold  
Hypoxia  
Dry Heat  
Uncompensable Heat

*"Own the Environment"*

### Toxic Chemicals

RFR  
Laser  
Blast  
Jolt/Impact  
Head-Supported Mass  
Load Carriage

### Materiel Hazards



**Warfighter  
Performance  
Threats**

### Metabolic Stressors

Detraining  
Overtraining  
Dehydration  
Fatigue

### Sleep Deprivation

*"Own the Night"*

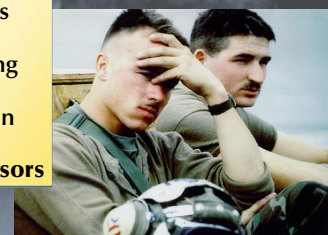
Traumatic Events  
Isolation  
New & Conflicting  
Roles  
Family Separation

### Neuropsychiatric Stressors

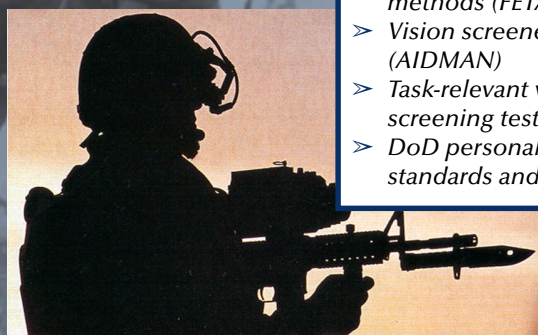
## Technological Complexity



## INTERNAL STRESSORS



## Examples of Recent Research Products



- Biomechanical models for evaluation of future load carriage systems
- Blast overpressure injury criteria
- Biomedical specifications for helmet ensembles
- Development of toxicology screening methods (FETAX assay)
- Vision screener for laser eye injury (AIDMAN)
- Task-relevant visual performance screening tests
- DoD personal readiness and fitness standards and assessment methods

- Biomedical data to support fielding of carbohydrate supplements (ERGO drink and HOOAH bar)
- Hydration tables revised to minimize hyponatremia risks
- Operational guidance for stimulant use in sleep-deprived soldiers
- Heat strain prediction model based on operational factors (SCENARIO)
- Effects of OPTEMPO on deployed soldier stress and performance
- Spatial disorientation simulator training program for aviators